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covery is interesting, since it is the only record of a peptase occurring in plants unassociated with ereptase. The enzyme is present as such, not in the form of zymogen. The leaves of *Drosera* were found to be capable of absorbing dissolved peptones from liquids placed on their surfaces in a few hours.—CHARLES A. SHULL.

Hepaticae in Scotland.—MACVICAR²⁶ has published a full account of the liverworts of Scotland, stating that "this work may be regarded as a new departure for Scotland in this branch of botany," previous publications having been fragmentary. An ecological discussion of nearly 50 pages precedes the list, the latter including a full list of stations under each species. Among other interesting facts of distribution, the altitudes to which species ascend may be mentioned. Of the 225 species included in the list, 20 ascend above 4000 ft., 61 reach 3000-4000 ft., and 32 reach 2000-3000 ft.; which means that half of the Scottish species ascend above 2000 ft. There are 67 genera recognized in the list, those including 10 or more species being *Lophozia* (26), *Scappania* (20), *Marsupella* (13), and *Cephalozia* (10).—J. M. C.

A cretaceous Pityoxylon with ray tracheids.—It has been supposed that the occurrence of ray tracheids in the pinelike conifers is more recent than the Cretaceous, so that their discovery by BAILEY²⁷ in a *Pityoxylon* from the Upper Cretaceous of New Jersey is one of considerable interest. The species represents a structure intermediate between the older cretaceous pines and the most primitive of living pines; and the infrequent occurrence of ray tracheids in the older portions of the stems and their entire absence from the younger wood are taken to indicate that these structures are of recent origin and are not strongly fixed upon the plant. This shifts the development of ray tracheids from the Tertiary to the Upper Cretaceous.—J. M. C.

Longevity of seeds.—Miss REES²⁸ has made a study of the relation existing between the structure and permeability of the coats and the longevity of seeds. In general, the macrobiotic seeds (retaining vitality for more than 15 years) belong to the legumes and have highly cutinized coats. *Eucalyptus calophylla* and *E. diversicolor* are exceptions. They possess no impervious covering, and, contrary to the general situation for macrobiotic seeds, they are large and very rich in oils.—WILLIAM CROCKER.

Laboratory air.—NELJUBOW²⁹ has studied the growth of the pea seedling in laboratory air and comes to the following conclusions: Ethylene is the

²⁶ MACVICAR, SYMERS M., The distribution of Hepaticae in Scotland. Trans. and Proc. Bot. Soc. Edinburgh **25**:vi+336. 1910.

²⁷ BAILEY, I. W., A cretaceous *Pityoxylon* with marginal tracheids. Ann. Botany **25**:315-325. pl. 26. 1911.

²⁸ REES, BERTHA, Longevity of seeds and structure and nature of the seed coat. Proc. Roy. Soc. Victoria N.S. **23**:393-414. 1911.

²⁹ NELJUBOW, D., Geotropism in der Laboratoriumsluft. Ber. Deutsch. Bot. Gesells. **29**:97-112. 1911.